CHAPTER VIE

SCIENTIFIC PROGRESS

§1

THE question is often asked, why the Romans, with their high powers of organisation and their remarkable technical ability (as shewn in their buildings, their baths, and especially their roads), never made any greater progress than they did in engineering science. One answer out of the many is particularly cogent. The reason lay above all in their cumbrous and elementary system of numbering. If a simple figure, such as 478, has to be represented by a long and complicated row of letters, cccclxxviii, it is obvious that arithmetical calculations are difficult, the study of higher mathematics closed, and many scientific and engineering developments which are dependent upon mathematical calculations enormously hampered. It was only when the western world was introduced to the more convenient, so called "Arabic" system of numbers, and with it to higher mathematics, that the path to the material civilisation of to-day was opened. One may affirm then that the introduction of the Arabic numerals to Europe, with the use of the zero and decimal system, was one of the landmarks in the history of Western civilisation. It is hardly too much to say that our mathematical system is the key to the material pre-eminence achieved

by European
culture in the past four centuries.

The so-called Arabic numerals are not however, in
fact, Arabic. They originated in India, where they were